846. Thus these different contacts of metals and other well-conducting solid bodies prove utterly inefficient in producing a current^ as well when solution of potassa is the third or fluid body in the circuit, as when that third body is either solution of sulphuret of potassium, or hydrated nitrous acid, or nitric acid, or mixed nitric and nitrous acids. Further, all the arguments respecting the inefficacy of the contacts of bodies interposed at the junction of the two principal solid substances, which were advanced in the case of the sulphuret of potassium solution (821), apply here with potassa; as they do indeed in every case of a conducting circuit where the interposed fluid is without chemical action and no current is produced. If a case could be brought forward in which the interposed fluid is without action, is yet a sufficiently good conductor, and a current *is* produced; then, indeed, the theory of contact would find evidence in its favour, which, as far as I can perceive, could not be overcome. I have most anxiously sought for such a case, but cannot find one (786).

847. The argument is now in a fit state for the resumption of that important point before adverted to (823, 832), which, if truly advanced by an advocate for the contact theory, would utterly annihilate the force of the previous experimental results, though it would not enable that theory to give a reason for the activity of, and the existence of a current in, the pile; but which, if in error, would leave the contact theory utterly, defenceless and without foundation.

848. A supporter of the contact theory may say that the various conducting electrolytes used in the previous experiments are like the metals; *i.e.* that they have an electromotive force at their points of contact with the metals and other solid conductors employed to complete the circuit; but that this is of such consistent strength at each place of contact, that, in a complete circle, the sum of the forces is o (797). The actions at the contacts are tense electromotive actions, but balanced, and so no current is produced. But what experiment is there to support this statement? where are the measured electromotive results proving it (796)? I believe there

are none.

849. The contact theory, after assuming that mere contacts of dissimilar substances have electromotive powers, further assumes a difference between metals and liquid conductors (798) without which it is impossible that the theory can explain the current in the voltaic pile: for whilst the contact effects in a